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INTEGRATED SYSTEMS

APPLICATION NOTE
SHARING INTELLIGENT SOLUTIONS

Title:	CNI Programming using Lantronix DeviceInstaller
Products Applicable:	5500CN C-Bus Network Interface

Lantronix® DeviceInstaller™ is a utility software application used for scanning, configuring and programming new or existing CNIs on a network.

You need a basic knowledge in IP addressing, in order to successfully and efficiently program a CNI.

IP addresses on a network must belong to the same subnet (have the same subnet mask) in order to talk to each other. Servers allocate IP addresses in a dynamic or static manner. When programming a CNI it is best to use a static IP address, as this ensures that the CNI is always available at the same address. Dynamic IP addresses (allocated by a DHCP Server) can be used in simple projects, where Schedule Plus or HomeGate is not used for MASTER/SLAVE computer configurations.

In a DIRECT connection (using a crossover Cat-5 cable), the connectivity is even simpler and the address method used for allocating IP addresses (dynamic or static) is no longer crucial.

If a CNI is connected to an existing PC network, its IP address and subnet mask is dictated by the existing PC network. If nothing fancy is required (such as a C-Bus remote connection via a local network or the Internet), dynamic IP addressing can be used. Most complex PC networks, are managed by a network administrator. You will need permission to install additional devices on such networks. You also need to know whether dynamic IP addressing can be used. If not, the network administrator will supply a specific static IP address and subnet mask.

Once the above factors are resolved, take the CNI out of the box and connect it. Power up the unit using the supplied or purchased mains adapter. Connect the C-Bus and Ethernet networks. DO NOT connect the pink C-Bus cable into the Ethernet socket, as this will damage the unit.

The two indicators on the front of the CNI indicate the status for the C-Bus and Ethernet connections. They should both be orange.

Next, launch the Lantronix® DeviceInstaller™. You should see a window similar to the one in Figure 1.

☞ You can download the DeviceInstaller™ software from the Clipsal Integrated Systems web site:

http://www2.clipsal.com/cis/technical/downloads/general_utilities#Lantronixdevice
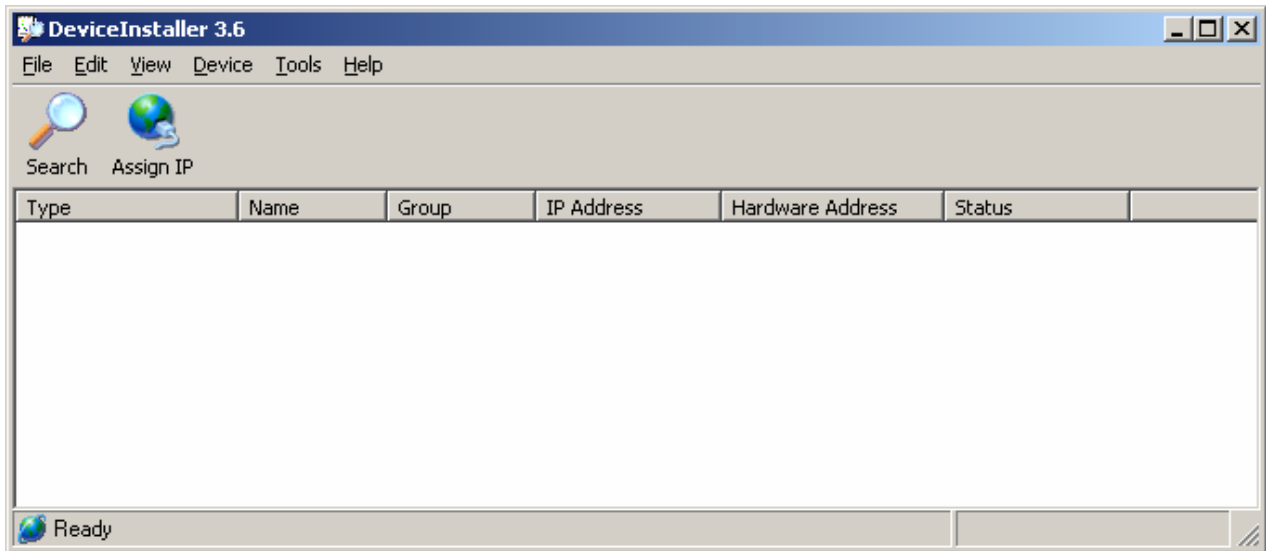

Figure 1 - The initial DeviceInstaller window

If you need to scan or reprogram an existing CNI on the network, click the Search button. In a few seconds you should see one or more CNIs listed, like in Figure 2.
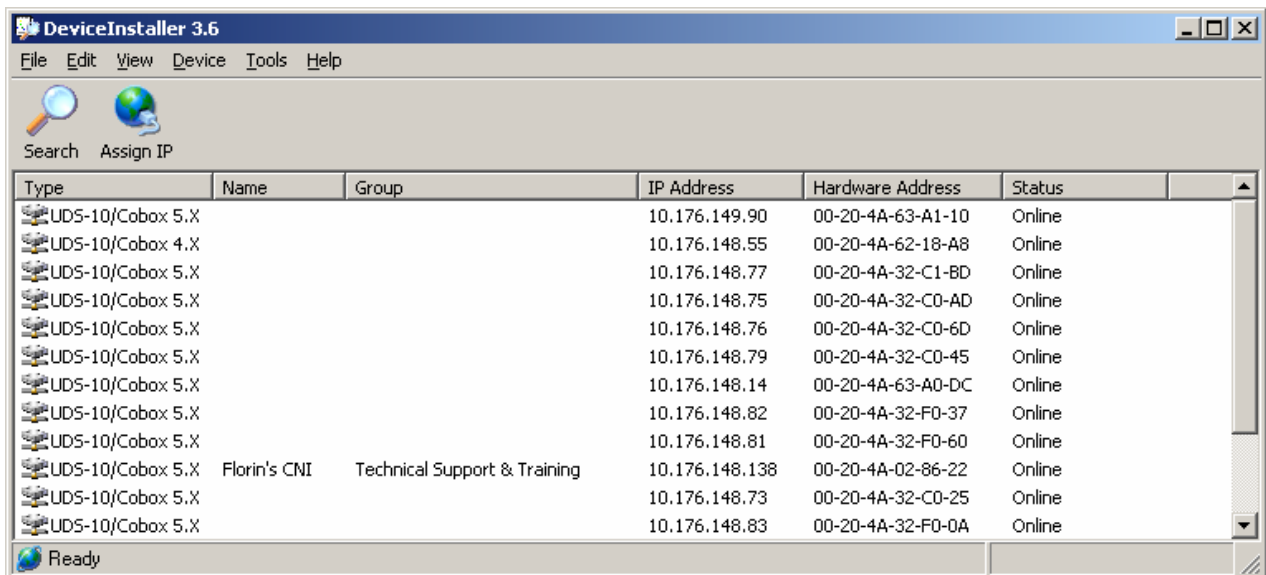

Figure 2 - The Search function lists the CNIs found on the network

Each device found will be a UDS-10/Cobox (either 4.x or 5.x depending on the firmware/hardware version). Information is provided about each CNI, including its allocated **IP Address**, **Hardware Address** (sometimes called the **MAC Address**) and **Status** (Online or Offline). Additionally a **Name** and **Group** may have been added when a CNI was initially programmed. The Name and Group may reflect the C-Bus network name and location or department.

If you have a new CNI, launch the DeviceInstaller™ and follow the steps below.

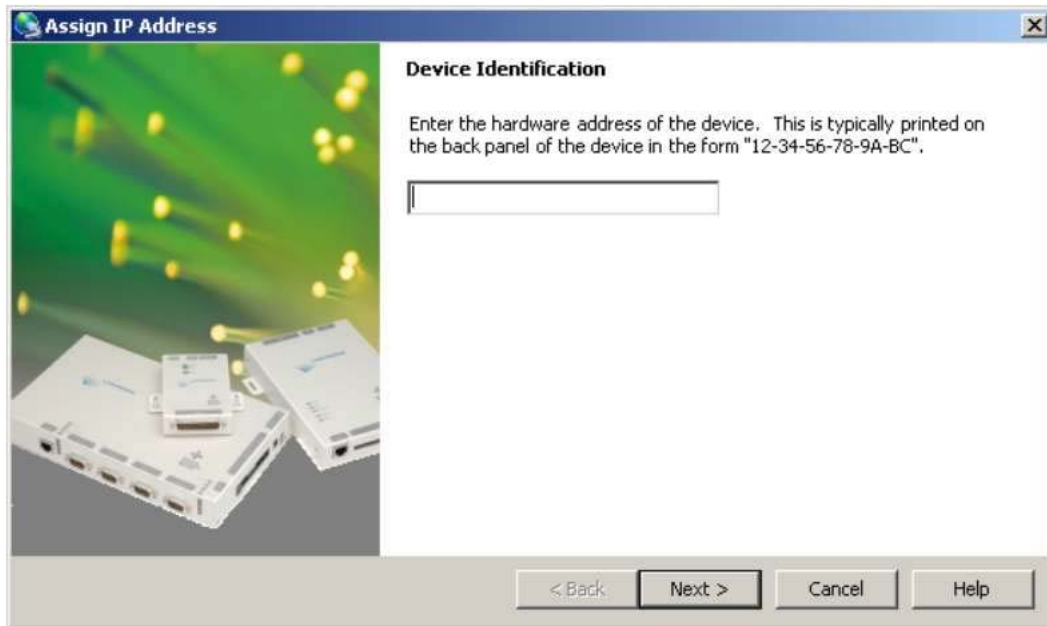1) Click the Assign IP button. This reveals the Device Identification panel shown in Figure 3.

Figure 3 - Entering the MAC Address of your CNI

2) Type in the CNI's MAC Address. This is printed on a label on the side of the CNI. An example MAC Address is 00-20-4A-02-86-22.

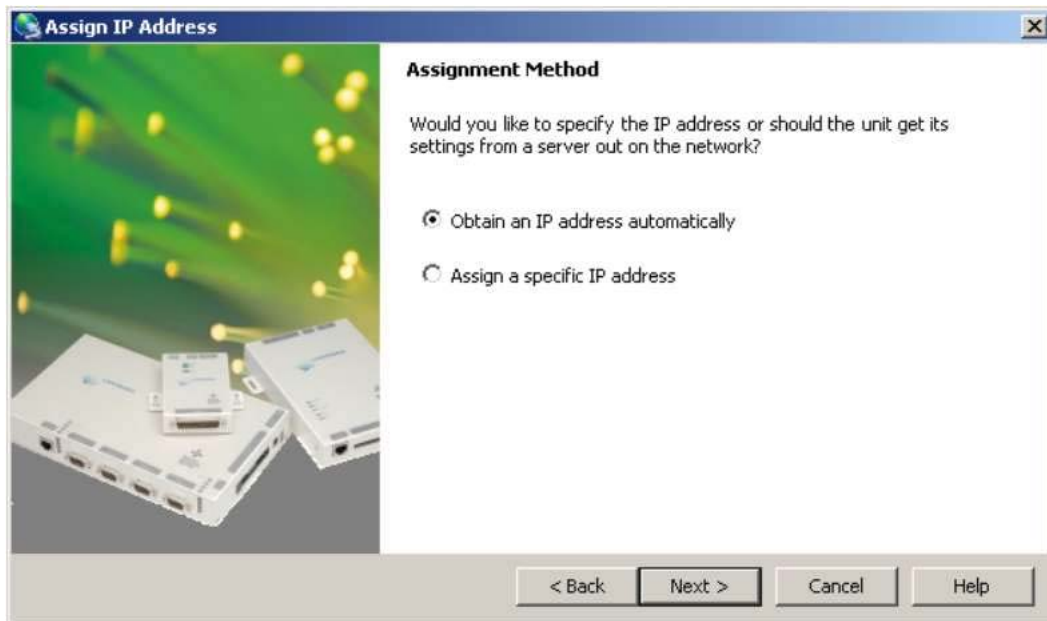3) Click Next. The Assignment Method panel is displayed.

Figure 4 - Selecting the IP address type

4) Select either the automatic (dynamic IP address) or specific (static IP address) option. Click Next. **If you chose the specific (static IP address) option, go to step 9).**

Dynamic IP Address Option

5) With the automatic (dynamic IP address) option selected, the IP Discovery Settings panel is displayed (Figure 5).
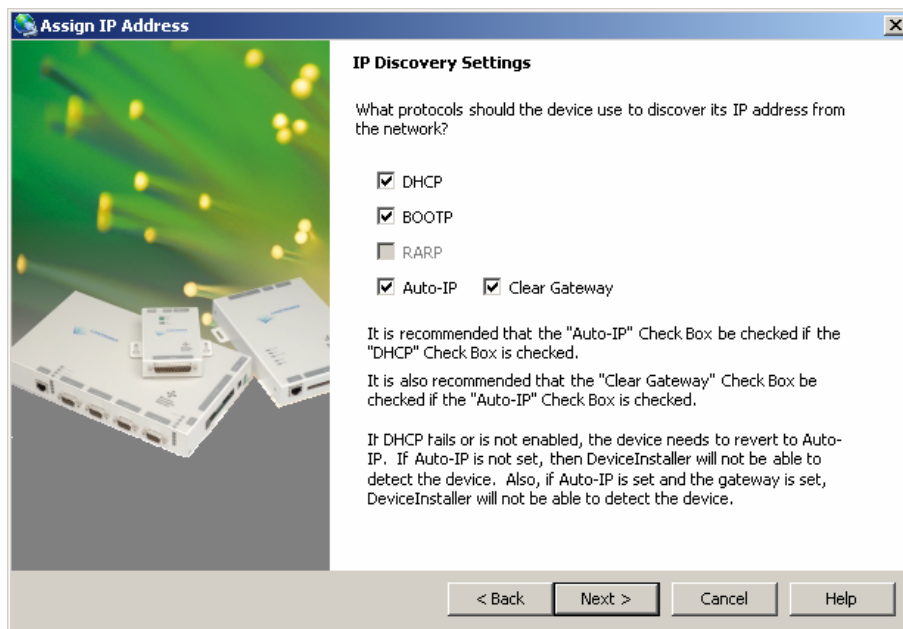

Figure 5 - Selecting the IP discovery settings

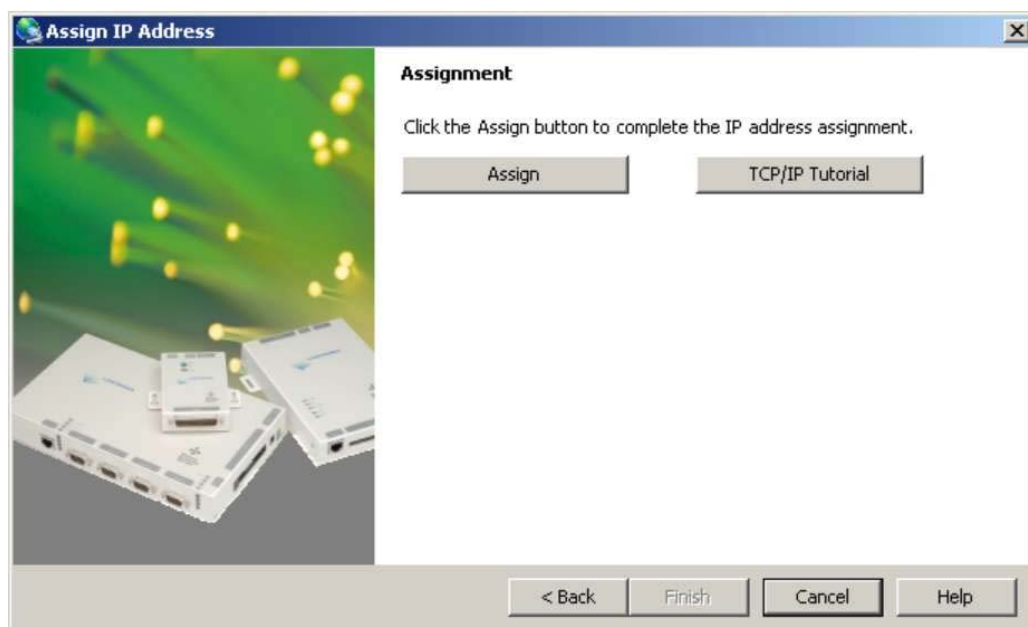6) Click Next again. The Assignment panel is displayed (Figure 6).

Figure 6 - The Assignment panel

7) Click the Assign button. You should see a progress bar as the configuration is applied. When the progress bar reaches 100%, click Finish.
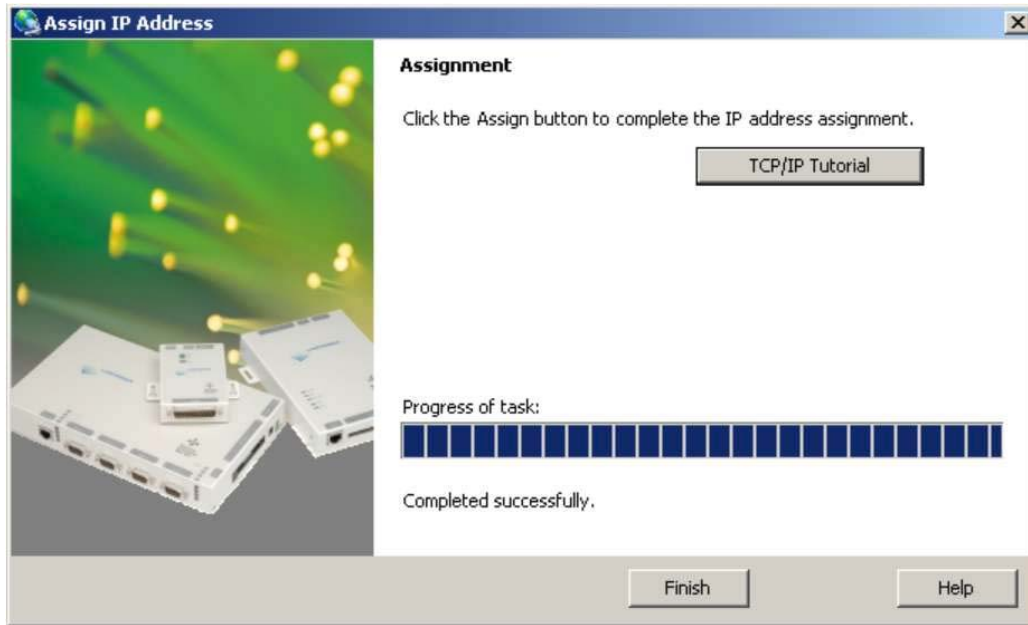

Figure 7 - A successful IP address assignment

8) In a few seconds the CNI should appear in the list with an IP address allocated by the DHCP server. Its status should be Online. If the CNI does not appear, click the Search button again.

Static IP Address Option

9) With the specific (static IP address) option selected, the IP Settings panel is displayed (Figure 8).
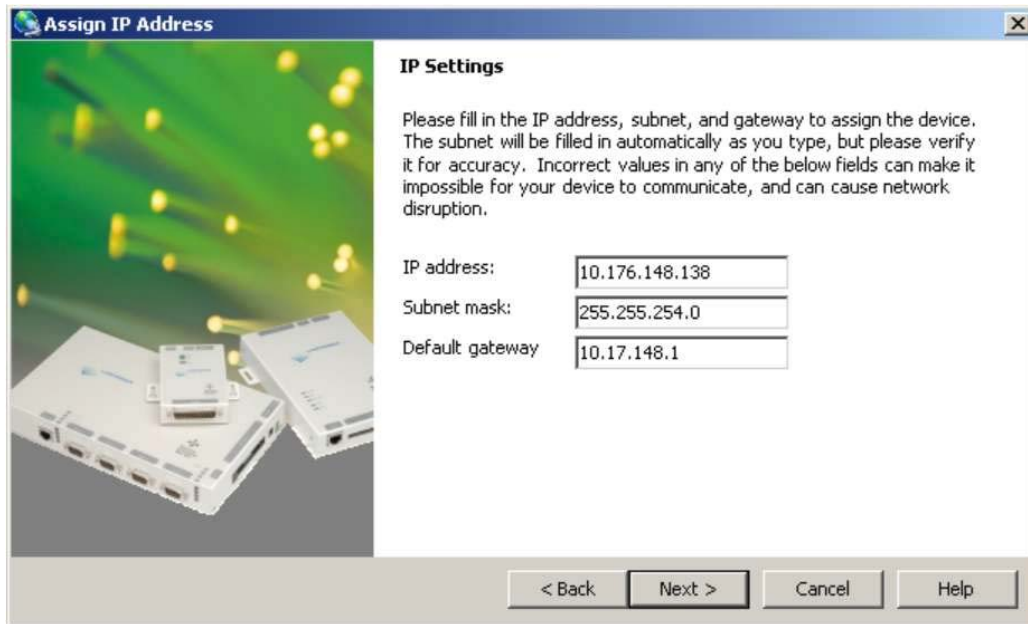
Figure 8 - Entering the IP settings

10) You must enter the subnet mask and a unique IP address which is compatible with the Ethernet network. This information may be obtained from the Network Administrator (in larger or complex networking environments).

You may leave the default gateway blank.

In a smaller network environment which uses static IP addresses, you can determine a suitable address by taking the IP address of your PC and using one similar. To reduce the likelihood of using a duplicate IP address, it is best that all network equipment is switched on and connected to the network when you do this. That way, the DeviceInstaller™ software can ensure the address you specify is not used by another network device.

To determine a suitable subnet mask and IP address, using Windows XP:

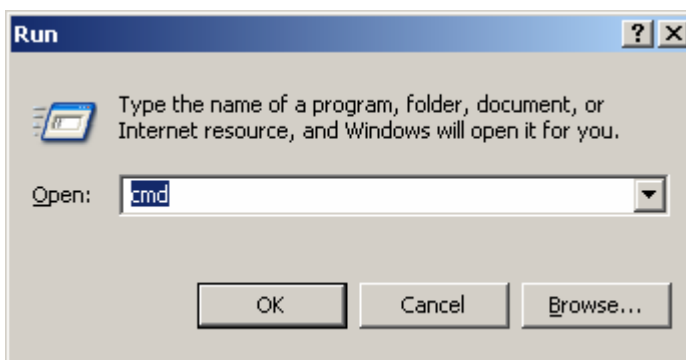i) Click "Run" in the Start menu, to activate the Run command panel.

Figure 9 - The Run command panel

ii) Type "cmd" in the text area and click OK. This activates a command prompt window.

iii) Type "ipconfig" and press enter. This displays the PC's network settings (Figure 10). Use the subnet mask displayed here, for the IP Settings panel of the DeviceInstaller.
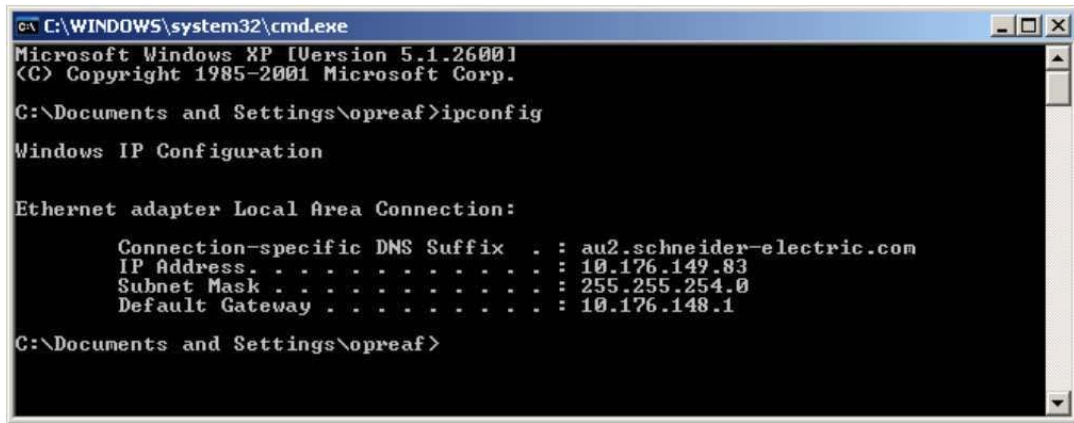

Figure 10 - Type "ipconfig" in a command prompt window to display the PC's network settings

iv) Use the IP address displayed in the command prompt as a guide. Add (or subtract, if the number is near 254) one or more to the fourth number in the IP address and enter this in the IP Settings panel. For example, if your PC's IP address is 10.176.149.83, type in something like 10.176.149.84.

v) Click Next. The DeviceInstaller will verify the validity of the IP address. If the address is used by another device on the network, increment the fourth number and try again. Repeat this until the DeviceInstaller™ accepts the IP address, and displays the final Assignment panel.
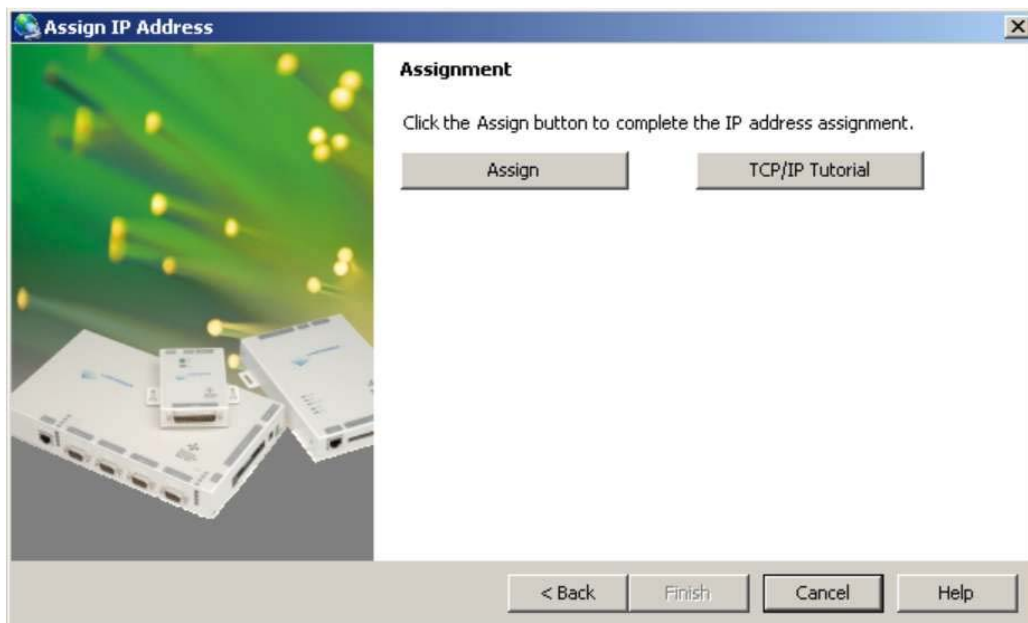

Figure 11 - The final Assignment panel

11) Click the Assign button.

12) Return to the initial launch window (Figure 1) and click Search. The DeviceInstaller™ should find your newly configured CNI, and display it along with any previously existing CNIs (Figure 12).
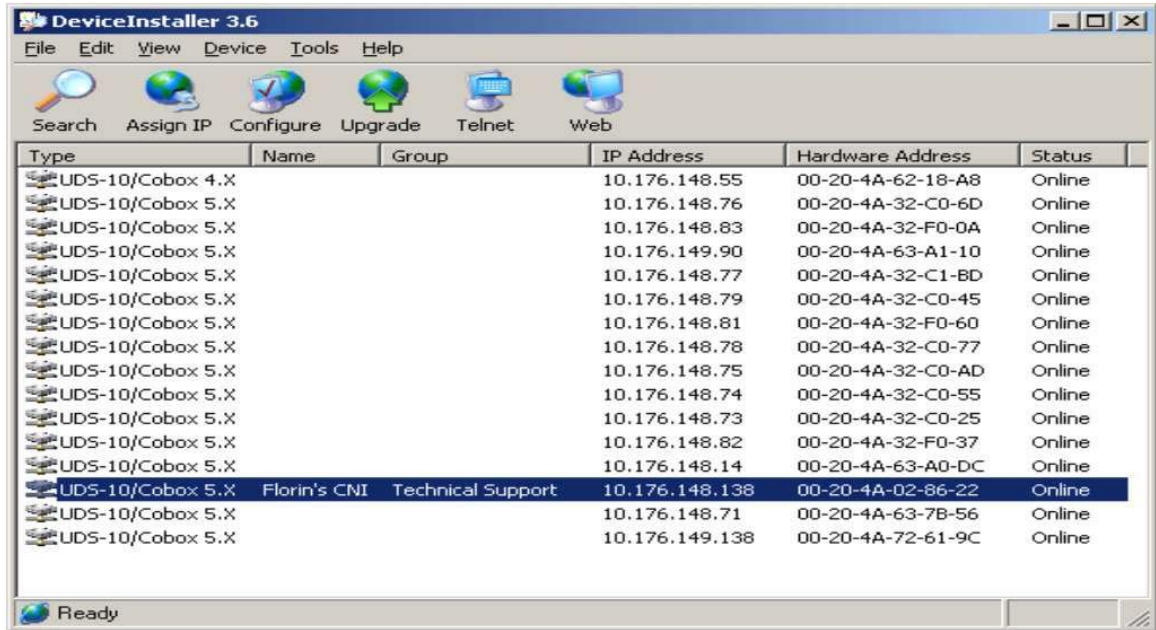

Figure 12 - The newly configured CNI is displayed along with the others

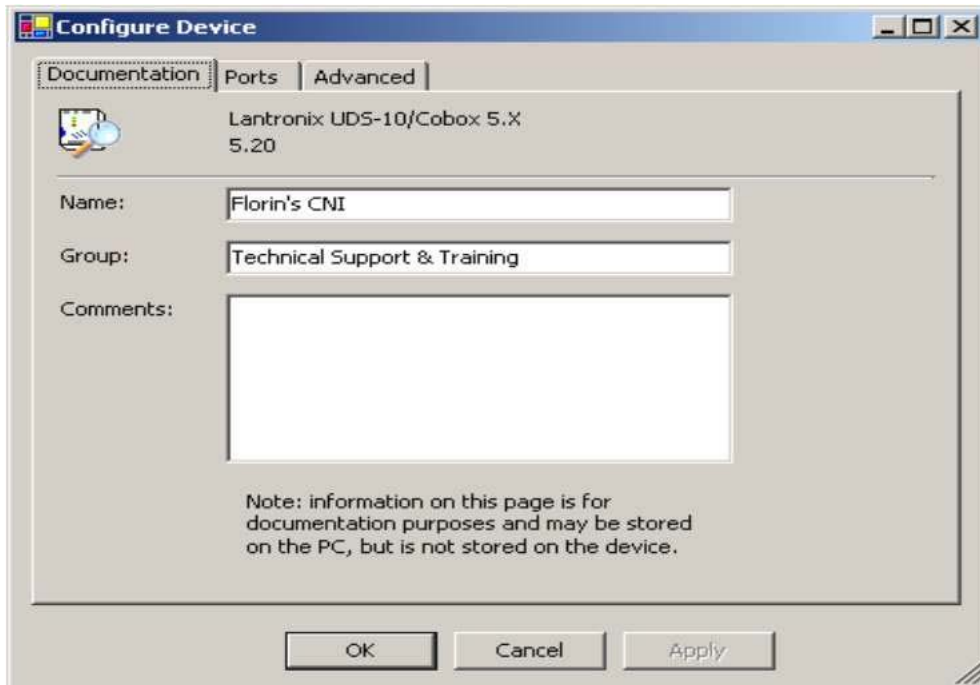13) You can set the Name and Group by clicking the Configure button.

Figure 13 - Adding name and group information

14) Finally, click the Web button and ensure that the Local Port is set to 10001. If necessary enter the port number and click the Update Settings button.
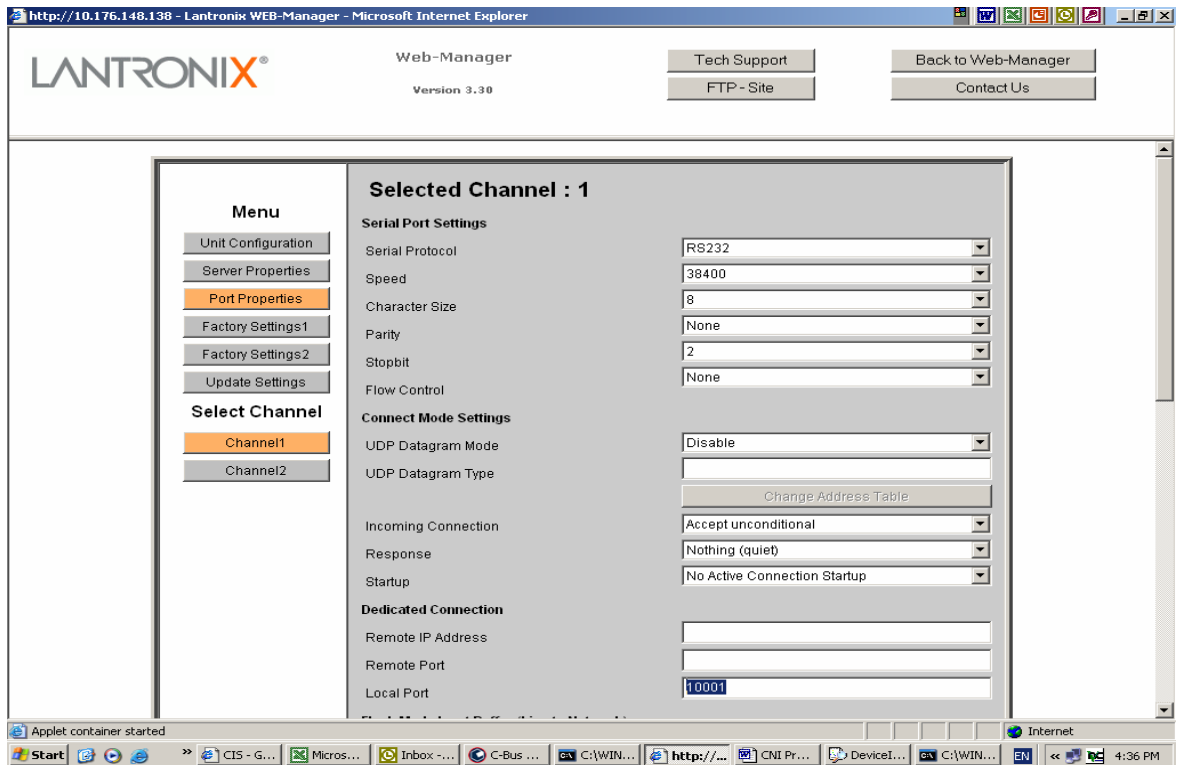
Figure 14 - Click the Web button to check the Local Port setting

Now that everything is configured, you can use the CNI to scan your C-Bus project from Toolkit. You may need to adjust the settings on your PC firewall, to allow communication between the PC and CNI.

Technical Support and Troubleshooting

For technical assistance call: 1300 722 247 (Australia)
0800 888 219 (New Zealand)

Worldwide contacts:　　　http://www.clipsal.com/locations/
Information and resources:　http://www.clipsal.com/cis/